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The **SARC Communicator** is published monthly for members of the Surrey Amateur Radio Club.

SARC maintains a website at www.ve7sar.net that includes club history, meetings, news and other information.



Location, Location, Location...

The Flea Market Was A Hit

Driving south on 200th Street a few Sundays ago it was hard to miss the signs "LARA SARC Amateur Radio Flea Market!" The signs led to 8th Avenue and the Campbell Valley Regional Park in Langley. There was ample parking, and after paying admission, which included tickets for door prizes, you entered a large open meadow flanked with 2 rows of vendors. Some had brought their vehicles and were tailgaters, others took advantage of the attractive shelters. The sun shone and it was a delight to browse and haggle in such an attractive setting.



Further over there was a covered shelter housing displays including SARC, SEPARS, ICOM and other vendors. A group of cheerful lady volunteers were offering cold drinks, coffee and cookies. Not be forgotten were the two dollar smokies. How big were they? Well a loaded smokie was almost too much to hold in one hand.

There was ample power from the generators and several displays were live. Before closing the deal purchasers were able to power up equipment and attach antennas. There was an engraving vendor and several hams were seen sporting attractive wooden IDs with their names and call signs.

Door prizes were called out every half hour. At one time the P.A. failed but this was no problem as announcements were made on the call-in frequency. Hams with radios were calling out

the winning numbers to those too intent on wheeling and dealing. Lucky winners were VA7HYS, VE7OM, VE7MLG, VE7AS, VA7UK, VE7OW, VE7UVL, VE7FGF, VE7YSB, and VE7VPK.

Some lucky person walked off with the cash door



prize of \$157.00. Then it was time for the grand prize raffle draw. John Parsons VA7FFR is probably lounging in luxury at Harrison Hot Springs, Brian Watts VE7EWB has a Grundig Globe Traveller Radio and Greg Banta VA7GAB can drive hands free with his Blue Tooth.

Congratulations and Thanks

No successful event like this is possible without tireless work both behind the scenes and on the day. Many hours were spent planning and detailing the program. There is a risk to an open air event. Everyone held their breath. All we needed was sunshine and We GOT IT! It was a profitable day for both SARC and LARA.

Mark your calendars, there are plans to do it again next year.

VITAL STATS!

- Over 40 Volunteers from SARC and LARA
- Sold over 30 tables or vehicle spots
- 10 free tables
- Buyers around 150.

- Bill Little VA7ZBL

**SARC EXECUTIVE FOR
2010-2011**

PRESIDENT
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Gary Skett VE7AS
Chris Zetner VA7CMZ



A great time was had by sellers, buyers and volunteers alike. There were lots of smiling faces by the end of the day and the weather was favourable despite some early rain and threatening clouds.

q r m QRM

Notice that blue text throughout The Communicator? They're hot links to web sites or email addresses. Click to follow them. Hovering over some pictures will reveal links as well.

Hey, did you see the latest issue of the RAC publication The Canadian Amateur? It has an article about SARC, SEPAR and the School Program written by Marcy Lui. As part of the program and our commitment to youth in the hobby, SARC donated two complimentary seats on the Fall basic course to two interested students from Pacific Heights Elementary School. We wish them success!

A few of us are looking to form a contesting group. Thanks to Neil King VA7DX for hosting a session and sharing his experiences. Alan Saunders VA7BIT took video and we hope to have an multimedia presentation ready soon. If there is interest we can choose some contests and form a team to participate. Contesting has some of the same pressures as emergency operation so it is good practice as well as good fun.

There is an ICS-100 workshop coming up on Saturday, October 2nd from 9-Noon. Email John ve7ti@separs.net if you would like a seat. [More information on ICS](#)

The average person today consumes almost [three times as much information](#) as what the typical person consumed in 1960. No wonder my head feels heavier as I get older!



Automatic Message Routing

No server, no BBS, no configuration files...

Just D-RATS!

The ARES community will be celebrating its 75th anniversary from September through December 2010. The first mention of an organized Amateur Radio emergency response organization appears in the September 1935 issue of QST Magazine.

SEPARS Report

Fred Orsetti VE7IO



For those who are unfamiliar with the Surrey Emergency Program Amateur Radio Society (SEPARS) please take a few minutes and visit our website at www.separs.net where you will find complete information on our emergency activities. As well, consider signing up for the users group <http://groups.google.com/group/separ>

where current information is always available and you will find a calendar of events. If you would like to join SEPARS please contact me at ve7io@separs.net or call Jocelyne Colbert, SEPARS administrator at 604.543.6795. Jocelyne can also be reached by email at jmcolbert@city.surrey.bc.ca

If you received the latest RAC TCA magazine you will notice the front cover has a photo of our group during the school workshop at Pacific Heights school. Even better, inside is a two page write up on the workshop with more excellent photos. The article was a joint project by Marcy, VE7JT and John VE7TI who prepared the article and submitted it to TCA. Well done Marcy and John. If you have not seen the article we will get copies for display at the SEPARS meeting on October 6th.



I am happy to report that we now have all the antennas up and functioning at the EOC. This has been a very long process and was finally concluded as the result of lots of help from SEPARS members. SEPARS members were asked to take on the task of acquiring and mounting the brackets on

the outside of the building. Fortunately our member, Kjeld VE7GP, who is a retired contractor, was able to provide the knowledge needed to complete the work. Under Kjeld's direction and help from a city tradesman all four sets of brackets were mounted. We then purchased five new aluminum pipes that were bolted into position on Thursday September 9th. The city also installed new conduit through the roof of



the radio room thus shortening up the coax runs. New LMR 400 cable has been installed and all radios are now connected to their own antenna. The two new antennas are a 2 meter, 70



cm and 23 cm and one for 2 meter 70 cm and 220 mhz. As you can see we are looking to the future when we will have 220 MHz and 1.2 GHz radios.

In addition to the new antennas we now have the cabinets securely mounted to the walls making the room more earthquake proof.

I would like to thank everyone who came to the radio room during the antenna mounting and earthquake proofing for their volunteer time.

The radio room is now completely functional thanks to the valuable contribution of the SEPARS members.



Where to now?

We are going to exercise once per month with the Langley emergency group starting on September 25th and one of our first challenges will be to get D-Rats fully operational.

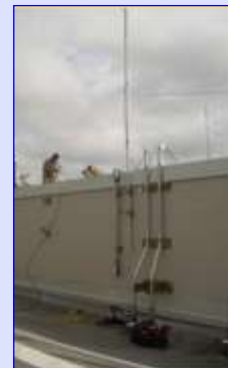
We are planning an open house at the radio room for late October.

SEPARS participated in a workshop with the LDS folks on Saturday September 11th. The agenda was to outline the roll of SEPARS and to cover proper message handling procedures. The session went very well with many questions from the participants.

We now have our first HiQ 5/80 screwdriver antenna and it is currently being tested by John Schouten, VE7TI. Initial indications are that it is receiving as well as a multiband wire antenna. Our results at the SARC flea market with this antenna were very encouraging. If this works out we will try to add one to each grab and go kit making the deployment of HF considerably easier.

SEPARS will be participating in the upcoming CN Family days on September 19th. We are looking for volunteers to help out with this demonstration.

SEPARS next meeting will be held at the South Surrey Recreation Center on **Wednesday October 6th at 1900 hours.** Guests are welcome please let us know if you would like to attend.



The new conduit for feed lines is much shorter and neater.

You see, wire telegraph is a kind of a very, very long cat. You pull his tail in New York and his head is meowing in Los Angeles. And radio operates exactly the same way: you send signals here, they receive them there. The only difference is that there is no cat.

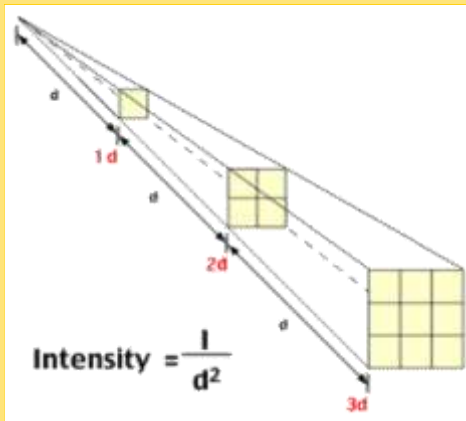
— Albert Einstein (1879 - 1955), when asked to describe radio.

Application Notes

Gary Skett VE7AS

The Inverse Square Law

The Inverse Square Law when referring to RF signal strength can be expressed from both the transmitted signal and the receive signal end in the following ways;



With an identical antenna at both the transmit site and the receiving station, regardless of whether the antenna is an omni-directional or highly directional antenna, if it took 1 watt of Effective Radiated Power to talk to a station 1

mile/kilometre away, then applying the I.S. Law would mean you need 4 watts for 2 miles, 9 watts for 3 miles, 16 watts for 4 miles, 25 watts for 5 miles... 100 watts for 10 miles/kilometres away. So if you had 1000 watt ERP output to a no-gain antenna, that would only give you 31.625 miles - line of sight communications. But that does not take into consideration any propagation, reflections, or the fact that the receiver is generally a lot more sensitive to weak signals... This I.S. Law is saying, for a given amount of signal strength to remain the same at each of the distances above, that is what you'd have to increase the ERP [by distance squared] to accomplish this.

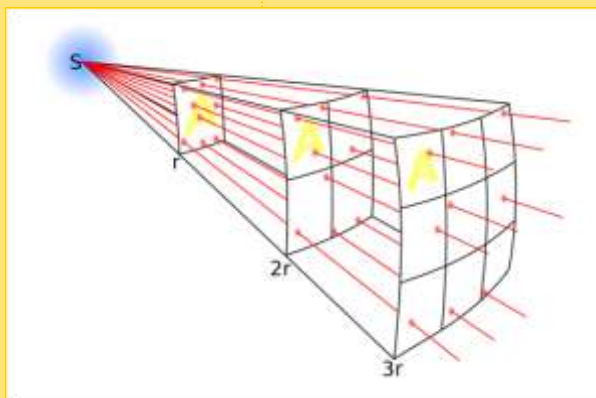
At the receive end, you can look at it this way; For a given [fixed] ERP at the transmit end, let's say for example, 100 Watts; The strength of the signal at the receive antenna

would be 1/4 of that at 2 miles distant [25 watts], 1/9th of that at 3 miles [11.1 watts], 1/16th [6.25 watts] at 4 miles, 1/25th at 5 miles [4 watts], 1/100th at 10 miles [1 watt], 1/1000th at 31.625 miles [100 milliwatts]... ad infinitum...

And that doesn't take into account, atmospheric and reflective/refractive absorption, and other losses, such as coax cable losses... this is just in AIR!

So with this in mind, three things come to light.

- 1) The difference between a transceiver with 100 watts output isn't going to increase the signal strength much more than a 200 watt transceiver and not really that much more for 1000 watts, when you have to consider dollars spent to get the power increase through amplification. Ok 1000 watts and 100 watts will yield a S-unit increase of maybe 10 units... or 10 db over S9... but at what point over S3 [or the noise floor] could you understand the conversation?
- 2) Antenna gain, even just 3db is enough to almost double the signal strength - at both ends. So you'd be better off spending the money on better gain antennas, than power amplifiers. Consider antennas with 3, 6, 10, or 20dbd with a 100 watt transceiver. What is your ERP at each of those decibel gain figures?



3) It's absolutely amazing that taking into account this Law, we can hear, under ideal conditions, a 5 watt HF signal half way around the world!



Have you grown weary of interminable email "threads" (topics) on your favorite email reflectors? If you use the gmail service, open the message on the unwanted thread, press the "m" key, and gmail will "mute" the conversation and not place future messages on the thread in your Inbox. (Thanks, David K2DBK)

More Application Notes

Gary Skett VE7AS



There is more to your radio than just your radio... and just because you can bring up a repeater with a click of your PTA button, doesn't necessarily mean you will have a full quieting signal sufficient enough to actually get whole

words out. [Oh, PTA isn't a typo... it means Push-to-Annoy button]... but I digress...

I hear far too many stations, be it hand held, mobile or base who consistently try to check into a net or have a conversation with poor quality signals or audio issues.

Here are 6 tips to better VHF/UHF Performance

- 1) Use the correct coax cable. You may be losing transmission efficiency if you're using coax that's too small for long cable runs. Here is a rule of thumb: For runs under 20 feet you can get away with RG58 A/U cable. Avoid using RG-174 for handheld jumpers. For runs longer than 20 feet, use RG8 or RG213 or better yet, LMR400. Over 100' LMR600. Use the right connectors too. You can get away with a good quality PL-259 (UHF) connector up for 144 or even 220 Mhz. But for 440 MHz you need to start using N-Connectors. Not only for better low loss characteristics, but because the PL-259 does not present a consistent 50-52 ohm impedance above 300 MHz. Use the best quality you can afford as the quality of the connector will severely affect your performance.
- 2) Stop corrosion with lubrication. Your antenna cables and hardware are extremely susceptible to moisture. Check the ends and lubricate them with marine or silicon grease and use coax seal or splicing tape for wrapping connections. You

73 Has No S

can expect a 10-15 year life span out of your stainless steel or anodized aluminum antenna. Far less for uncoated copper or unprotected aluminum. Scotch 33 or 88 is the best electrical tape over the layer of splicing tape or coax seal for added protection.

- 3) Mount your antenna as high as possible. VHF/UHF communications is determined by line of sight, and the higher you mount your antenna, the further your transmission will carry. Dense trees, lots of metal in and on buildings will diminish your transmit and receive signals.
- 4) Get a higher gain antenna! You're stuck to 5 watts on a hand held with a rubber antenna that offers negative gain (a loss). $\frac{1}{4}$ wave antennas are unity gain or NO gain. Antennas come in 3, 6, 9-10 or higher DB gain. Even a 3db antenna on a hand held is going to effectively increase your ability to transmit and receive by a factor of 2 (or twice). 6db is twice as good as a 3db antenna. You can't use the repeater as a crutch for a poor signal. Bad in, bad out...
- 5) Check your antenna mounting location. If your antenna is mounted within 3 feet of a parallel metal surface, it will "de-tune" your antenna system and your radio will lose efficiency. If it's mounted low on a bumper, next to your AM/FM antenna on your car, or you are using the wrong antenna for the installation - e.g. a $\frac{5}{8}$ th on the mirror mount, where a $\frac{1}{2}$ wave is a better choice.

6) Don't yell into your microphone! This is FM, not SSB or CB... Get your radio tuned properly, use the original mic or at least one with the same input impedance and don't over deviate by yelling.

If you have a wide band FM radio, and you are trying to work into a narrow band FM repeater, your audio will sound terrible and yelling only makes it worse. Forget the old saying "use only the lowest power to get the job done" Bull... if you have a 75 watt radio, use the damn power... in FM the strongest signal wins... It just annoys the heck out of us who have to listen to a QRP radio unable to capture the repeater to produce a full quieting signal. If

you are next to each other or a car length away, then fine... 500 mW is good... you annoy less people... but check into the net with max power, a high gain antenna and a properly adjusted radio. Try avoiding embarrassing the net control station who asks for a "relay" as if he is on SSB or weak signal CW... FM is either there or it's not, everyone listening to the repeater hears the same quality of signal at the same time... asking for a relay is admitting you aren't listening or have a poor receiver... or your hearing aid needs new batteries.

BASIC HAM LICENSING CLASSES START ON THURSDAY, SEPT. 30TH

ARE YOU INTERESTED IN RADIO FOR EMERGENCY RESPONSE?
WANT TO BUILD RADIO EQUIPMENT AND ANTENNAS OR
COMMUNICATE BY HAM RADIO WITH OTHERS ACROSS THE GLOBE OR
USE ORBITING SATELLITES TO RELAY RADIO SIGNALS?
YOU CAN DO ALL OF THESE AND MORE

THE COURSE WILL BE GIVEN OVER 9 WEEKS, INCLUDING INDUSTRY CANADA EXAM
EVERY THURSDAY EVENING 6:30 TO 9:30 AT No. 9 FIREHALL

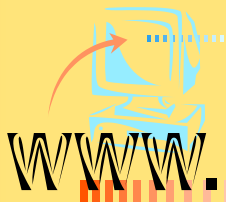
14901 64 Avenue, Surrey

(north side of 64th Ave. at the railway crossing)

Sign up at: va7xb@rac.ca OR ve7as@rac.ca

COURSE FEE: \$120

HamSpeak Opinion



Dot Ham

There has been talk of a .ham top-level -domain (dot ham) for a long time. Yet, it has not come into being. This is in part because it is not clear who would have the right to run it, and potentially make lots of money selling names. Disagreeing parties have succeeded in blocking each other. Perhaps we should do away with the commercial aspect entirely? It is to be run simply, and in a way not to confer or trespass on intellectual property. There will be no domain squatting, or domain speculation, or lawsuits.

Dot ham is not for profit. It will be a chartered entity in whichever country or countries it is organized in. Only call-signs are allowed. This includes ham organizations. While arrl.ham or rsgb.ham might not cause a stir, there would be many contenders for domains like barc.ham. Why not do away with all the competing claims? All groups are to be treated equally, by call-sign.

It is not expensive. A .ham domain should not cost more than a couple of dollars/euros/quid per year. Politics is eschewed. Unless there is a clear and compelling reason for the organization to have a preference in guiding some policy, it will not do so.

Dot ham is international. This means it must include countries which are in disfavour, such as North Korea and Cuba. It is multilingual. Instructions for domain registration will be provided in all languages within the resources of the dotham organization. Yet, the operational language within the organization will be English, due to its widespread use and great convenience in computer systems.

We hope that it will be inclusive. In order to be so, operators in poorer countries may be charged significantly less than those in richer ones. But dot ham should not go to the extent of fee differentiation based upon the relative wealth of individuals within a given country.

It is secure. Systems to ensure only the proper people control the domain must be implemented. It is extensible, i.e. it can be extended by the use of additional data elements associated with a call-sign to provide additional information.

It is independently run, not part of ARRL or any other national group. It has a relatively stable, yet elected, board. The board appoints the president, who oversees operations.

It is minimally standardized. That is to say, there are many 'best practices', which should be followed, but there are a very few, simple rules. To quote Thomas Paine: "That government is best which governs least."

It is professional. It will act with technical competence, organizational transparency, and swift response to critical issues.

Four exceptions:

- 1) info.ham which is a very introductory page for non-hams interested in ham radio. It would be primarily links to more detailed explanations in local languages.
- 2) nic.ham - network information center - for management of .ham domains.
- 3) Technical hostnames for the .ham operational structure, i.e. dns1.ham and router1.ham
- 4) an easter egg ;)

I have many more ideas on what is possible, and the way things should be run. There are many ways to achieve some of these goals, which I have worked out. I have created the yahoo group 'dotham' where these technical details can be discussed. I have also registered the domain dotham.org, which will be the focus of my attempts to get this project started.

What needs to be done?

Get a good group of committed people to make proposals, come up with new ideas, try to smooth out disputes, and generally get things in good order.

Establish an executive group which represents the amateur community, which is also competent in technical execution, who can dedicate time towards making dotham a reality.

Obtain support from Amateur Radio organizations and the Amateur Radio community as a whole.

Draft a proposal to the IETF, who is in charge of new TLDs.

Obtain resources and money to start the project.

Technical design

Start it up!

73,

Bob Keyes, N1YRK

SARC Tower Has A New Home

SARC offered for sale by sealed bid, it's crank-up tower, now surplus to our needs since receiving a donation of the Telus portable tower. Mounted on its own trailer, it cranked up to approximately 50 ft. The unit, though in usable condition as is, would benefit from new wiring and paint.



We would like to acknowledge Al Neufeld VE7CDC, who originally donated the tower to SARC, and who gave permission for its sale.

The successful bidder was the North Shore Amateur Radio Club, which will be responsible for the cost of insurance and registration. We hope the tower will produce as many 'Q's' for its new owner as it did for us.



'Net' Working Internet Resources for Hams

The 'SolderSmoke' Podcast and web page are the story of a secret, after-hours life in electronics. Bill Meara started out as a normal kid, from a normal American town. But around the age of 12 he got interested in electronics, and he has never been the same.

To make matters worse, when he got older he became a diplomat. His work has taken him to Panama, Honduras, El Salvador, the Spanish Basque Country, the Dominican Republic, the Azores islands of Portugal, London, and, most recently, Rome. In almost all of these places his addiction to electronics caused him to seek out like-minded radio fiends, to stay up late into the night working on strange projects, and to build embarrassingly large antennas above innocent foreign neighbourhoods. SolderSmoke takes you into the basement workshops and electronics parts stores of these exotic foreign places, and lets you experience the life of an expatriate geek.

SolderSmoke is no ordinary blog. It is a technical memoir. Each entry and podcast contain descriptions of Bill's struggles to understand (really understand) radio-electronic theory. Why does $P=IE$? Do holes really flow through transistors? What is a radio wave? How does a frequency mixer produce sum and difference frequen-

cies? If these are the kinds of questions that keep you up at night, this site is for you.

Finally, SolderSmoke is about brotherhood. International, cross-border brotherhood. Through the SolderSmoke podcast we have discovered that all around the world, in countries as different as Sudan and Switzerland, there are geeks just like us, guys with essentially the same story, guys who got interested in radio and electronics as teenagers, and who have stuck with it ever since. Our technical addiction gives us something in common, something that transcends national differences. And our electronics gives us the means to communicate. United by a common interest in radio, and drawn closer together by means of the internet, we form an "International Brotherhood of Electronic Wizards."

The podcasts are entertaining and informative and excellent to listen to on your iPod as you go for your daily walk. The past episodes are available and the website has a handy index if you want to select episodes with content of particular interest. Check it out...

<http://soldersmoke.blogspot.com/>



SARC President's Comments

John Brodie VA7XB



With our successful summer flea market now behind us, what does SARC have planned for the new season? Those who attended the Sept. 8th meeting will have heard about the plan to relocate our VHF and UHF repeaters to a North Surrey high-rise tower, a step that should dramatically improve communication at topographically low areas of Surrey and beyond. We have Surrey Fire Services to thank for this development, which was a result of a proposal put forth by a few members over the summer.

In this regard, a Lottery grant application has also been submitted that will (if successful) allow replacement of the old equipment with more modern gear.

For the benefit of prospective hams, Instructor Gary Skett VE7AS is gearing up for another basic ham licensing classes, scheduled to start on Sept. 30th. The venue can only

accommodate 19 students so don't delay if someone you know would like to register.

Then on Oct. 2nd, SARC is sponsoring an RDF Foxhunt at Watershed Park in support of Delta Amateur Radio Society's Com-Fest 2010. Find out more and help support Delta's event at:

www.deltaamateurradio.com/ComFest

SARC will have a table at Com-Fest and can accommodate a modest number of items for sale from any members who are available to help man the table.

Beyond all this, your Executive is always looking for your ideas to make SARC more fulfilling for its members. What you, as a member, will get out of SARC will depend on how much of your time you are willing to contribute to the benefit of the Club. Think about how you might get involved, then volunteer to do your part. Next meeting is October 13th at the PREOC, where we will revive our discussion about future club activities (deferred twice due to lack of time at previous meetings).

...and finally The Last Word

Five Canadians are attending the RDF (Radio direction finding) competition in Croatia on Sept. 13th of this year. Four are from B.C. Every two years, hams from around the world gather to see who is best at on-foot hidden transmitter hunting. The 15th World Championships take place September 13 through 18. The headquarters site is a hotel in the resort city of Opatija on the Adriatic Sea coast.

As always, there will be separate events for each competitor on eighty meters and two meters, each with up to five transmitters scattered in a forest that might encompass 1000 acres or more. Medals await the top three individual competitors in each category, as well as the top three nations' teams. Team scores are based on aggregation of individual performances. Team members may not assist one another on the courses.

Each country may send up to three ARDF competitors in each of eleven age categories, six for males and five for females, in accordance with rules of the International Amateur Radio Union. Team members are responsible for their own event registration fees as well as transportation expenses to and from Croatia.

Also taking place in Opatija on September 14 is the First ARDF World Championships for the Blind. That competition is on 80 meters in an open area with no obstacles, following rules that the Croatian Amateur Radio Association developed in 1998 for competitions among clubs for the blind in that country. More information? <http://bcradiosport.qclubb.com/public>

DOWN THE LOG...

SARC Monthly Meetings

2nd Wednesday (Sept-Jun)
1900 hrs local at PEP PREOC,
96th Avenue, Surrey

Weekly Club Breakfast

Friday at 0830 local
ABC Country Restaurant located
at 600 - 7380 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 local
on 147.360 MHz (+) Tone=110.9.

SEPARS Simplex Net

Tuesday at 19:30 local
on 146.550MHz simplex.

Announcements & News

SARC Fall Foxhunt

Saturday Oct. 2nd is the date of the SARC foxhunt in association with DARS Com-Fest.

Basic Amateur Radio Course

We have had a lot of interest in another Basic Course so we will be putting one on for 9 weeks starting on Thursday, September 30th 6:30-9pm, at Firehall 9 14901 64 Ave. Sign up via va7xb@rac.ca or ve7as@rac.ca

And we are calling for a few SARC members to assist with registration, assisting the instructor, classroom aide etc. Contact John, va7xb@rac.ca

On the Web ve7sar.net

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements may also be found on our web page.



SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible

on IRLP node 1980 and Echolink node 496228. On UHF we operate a repeater on 443.775MHz (+5MHz) Tone=110.9 and IRPL node 1463. Coming soon, a repeater at 224.000MHz (-1.6MHz).

VIA THE WEB

www.ve7sar.net

Webmaster Hiu Yee
VE7YXG

Editor: John Schouten
ve7ti@rac.ca

TELEPHONE & ADDRESS

(604) 591-1825

va7xb@rac.ca

12160 Boundary Drive S.
Surrey BC V3X 2B7

CONTACT